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Flow Measurement in F1 Racing Cars

High pressure flowmeters from **Titan Enterprises** have, over the last decade, been widely used in the **hydraulic test systems of F1 racing cars** to measure fluid flow. A high-performance engine company also uses Titan flow meters to monitor the oil flow lubricating its turbo units on the test bench.

Formula 1 engines

typically have no cooling fans and therefore need to reliably run at temperatures in excess of 200°C. Measuring the **high flow of coolant water** at these elevated temperatures, without causing an undue pressure drop in the system, is another example of an automotive flow measurement development undertaken by Titan. Using the inherent very low pressure drop of their Oval gear flow meter design – Titan produced a 200°C, 50 L/minute flow meter with a pressure drop of less than 100mBar to solve this challenging application.

A few years ago,

one racing team turned to Titan as it did not trust the fuel flow figures being returned from their engine suppliers fuel management systems. For this application a very

lightweight oval gear flowmeter was designed to be installed safely in the fuel tank of the racing car. Designed to be immune to immersion in fuel and the very noisy electrical environment of a racing car. This flowmeter has provided accurate flow measurement over an extended period of time.

In addition, a growing number

of engine and car manufacturing companies have benefited from using Titan's **Atrato ultrasonic flowmeter for both diesel and petrol measurement** on test stands and in engine development. Because the Atrato does not have a contorted flow path, and fuel passes straight through the flowmeter, it can uniquely operate at the same bore as the fuel lines. This reduces the pressure loss and keeps “dead” fuel volume to a minimum.

For further information

on optimised flowmeters for high performance Formula 1 racing cars and for other automotive applications please contact Titan Enterprises on +44-1935-812790 or sales@flowmeters.co.uk.

Titan Enterprises

Drawing upon over 40-years of flowmeter innovation - Titan Enterprises Ltd are a manufacturer of high-performance solutions including the Atrato ultrasonic flowmeter, Oval Gear flowmeters, low flow Turbine flow meters and a flow instrument range. Titan's company philosophy of “pushing the envelope by trying to do things a little different and better” has resulted in sales of over 1,000,000 products into 50 countries worldwide and a repeat purchase percentage of 95%. All flow meters produced by Titan Enterprises are designed and manufactured to ISO9001 and calibrated to an uncertainty of $\pm 0.25\%$.



Caption: Lightweight oval gear flowmeter for F1 racing cars



Caption: Atrato ultrasonic flowmeter for automotive applications